

About the City of Cambridge Journey to Work Data

Data Sources

The data in this document derives from three sources, all of which include counts for commuting modes to and from all towns where Cambridge residents work or in which Cambridge workers reside:

- The 1990 data originates from Journey to Work data supplied to the Massachusetts Central Transportation Planning Staff by the Census Bureau. The data derives from a special compilation of 1990 Decennial Census data provided to transportation planners.
- The 2000 data derives from the 2000 Census Transportation Planning Products (CTPP), a special tabulation of 2000 Decennial Census data. The CTPP summarizes information by place of residence, by place of work, and by worker-flows between home and work. In the worker-flows of the CTPP the Census Bureau took steps that make comparisons to analogous data sets problematic. To protect confidentiality, many values were rounded and commute modes combined. This affects the user's ability to separate bicyclers, walkers, and several other "minor" modes of commuting into individual categories. While there exists no straightforward means to generate values for all modes, such figure have been approximated using a series of calculations.
- The 2006 – 2010 data is excerpted from the most recent version of the CTPP. Unlike prior data sets, the most current data is based on a recompilation of data from the American Community Survey, the Census Bureau program that replaced the Decennial Census. To prevent the disclosure of data that could be traced to specific individuals, data is suppressed, rounded, and in some cases perturbed. (Additional information on the 5-year CTPP data can be found on their website:
<http://ctpp.transportation.org/Pages/5-Year-Data.aspx>)

Both the 1990 and 2000 JTW data derive from the results of the long form Decennial Census questionnaire, which was sent to approximately one in six households for completion on the same date – April 1 of the respective census year - and included a range of socioeconomic questions including ones concerning job location and commute mode, length and start time. The ACS replaces the long form questionnaire and incorporates analogous questions related to commuting. The newer survey is administered on a rolling basis throughout the year to approximately 1% to 2% of the population annually. The 2006 - 2010 dataset compiles five years of ACS results into a single file.

Preparation of 2000 Journey to Work Mode Split

Steps taken by the Census Bureau to protect confidentiality by suppressing data make the use of the 2000 data set and its comparison to analogous data problematic. This effort distorted the reported means of transportation results, which separates bicyclers, walkers, and several other “minor” modes of commuting. Thus, there exists no straightforward means to generate 2000 Journey to Work tables directly analogous to those from other periods. The mode splits for biking, walking and other modes are skewed, typically with too many walkers and too few “other” mode users.

To correct the systematic error affecting the figures for biking, walking and other modes, we recalculated all Journey to Work figures. We used the mode splits found in the appropriate CTPP population to normalize the biking, walking and “other” mode figures. Discrepancies remain, but they are smaller in magnitude. Users should be aware of the heavily processed nature of the information presented here and potential for discrepancies when compared to other source for 2000 JTW data.

Definitions of Key Terms

- *Destination*: The town to which workers are commuting.
- *Origin*: The town from which workers are commuting.
- *Income*: Refers to household income unless otherwise noted.
- *Mode*: The primary style of commuting (for example, driving alone, carpooling, public transit, walking, biking, etc.).
- *Public Transit*: Use of a bus, trolley, streetcar, subway, railroad, ferryboat, or elevated rail as provided by the MBTA or another transportation service, such as the EZRide Shuttle.
- *Laborforce*: Employed Cambridge residents regardless of workplace destination.
- *Resident Workforce*: Cambridge residents also working in the city; this group is a subset of the workforce. Where demographic pertains to commuters, percentages are derived from total population that did not work from home rather than total population of workers.
- *Workforce*: Workers in Cambridge regardless of household origin.

Census Tract Boundaries

Census tracts are designed by the Census Bureau to provide a relatively permanent set of geographic units for the presentation of statistical data. Occasionally, census tracts may grow in population size enough to qualify as more than one tract. When a tract is split, the resulting

two parts retain their basic four-digit numeric code and are given a two digit extension. For example, for the 2010 decennial census Cambridge census tract 3521 was split into 3521.01 and 3521.02. Means of transportation tables by census tract reflect that Cambridge census tracts 3521 and 3531 were split for the 2006-2010 CTPP data. These tables present statistical data for each new tract both separately and combined for ease of comparison across time.

Inclusion of Students and Other Group Quarters Residents in JTW Mode Data

The JTW data sets from 1990, 2000 and 2006-10 all include data collected from employed students living both on and off campus. However, residents of noninstitutionalized group quarters, such as dormitories, are not included in tables that rely upon household statistics such as those about income, presence of children, and vehicle availability. Residents of institutional group quarters, such as nursing homes and jails, were included in JTW data generated from the 1990 and 2000 decennial censuses. Starting in 2006 institutional group quarters residents were excluded from all JTW statistics collected through the ACS.

Proportion of Commuters Assigned to Walking Mode

Commute mode data derives from the question: “How did this person usually get to work last week? If this person used more than one method of transportation during the trip mark the box for the one used for most of the distance.” Responses should account for the majority of distance traveled, rather than time taken.

Mistaken answers based on time rather than distance might help account for the seemingly large proportion of commuters who either report walking from Cambridge to work in distant towns or walking from distant towns to work in Cambridge. Another source for such commuters comprises persons commuting to work during Census week from hotels or another person’s private residence. Whatever the source for these long distance walkers, similarly high figures were reported by each of the JTW data sets.

Availability of Vehicles and Single Occupancy Vehicle Mode

The number of vehicles available to the household is compiled from the answer to the question: “How many automobiles, vans, and trucks of one-ton capacity or less are kept at home for use by members of this household?”

An anomaly in the data is the frequency with which persons who report no access to a vehicle also report driving alone to work. This issue may have several causes. Aside from incorrect answers to the question, there appear to be at least three likely explanations. Under some circumstances work vehicles that are brought home by an employee might not be considered a vehicle “available to the household.” The questionnaire instructions exclude certain such

vehicles if they are not otherwise available for personal errands. Vehicles might also be incorrectly excluded using a misinterpretation of the rule. A second possibility is vehicles borrowed from friends and family members which the respondent does not consider a household vehicle. A third possibility that seems more possible within the Cambridge context is persons who use a carshare vehicle for commuting purposes, such as Zip Car, Enterprise, or Hertz.

Additional Sources of Information

- AASHTO's Census Transportation Planning Products
 - <http://data5.ctpp.transportation.org/ctpp/Browse/browsetables.aspx>
- For more info about the CTPP program see
 - <http://ctpp.transportation.org/Pages/5-Year-Info.aspx>
- 2010 Census Tract Population Characteristics
 - <http://www.cambridgema.gov/CDD/factsandmaps/populationdata/censustract/2010ctpopulation>
- Map of Population Distribution by Census Block with Neighborhood Boundaries
 - http://www.cambridgema.gov/~media/Files/CDD/FactsandMaps/PopulationData/Maps/2010neigh/map_census_2010_pop_dot.pdf

For More Information

For additional information about this data set contact the City of Cambridge Community Development Department at 617/349-4600 or CDDat344@CambridgeMA.gov.